

1. A method of shaping an end face of an optical fiber, comprising heating the end face to form a substantially hemispherical end face having a predetermined radius value, comprising the steps of:

5           repetitively calculating an actual radius value of the end face;  
          comparing the actual radius value with the predetermined radius value;  
          continuing heating of the end face if the actual radius value is lower than the predetermined radius value; and

10           discontinuing the heating of the end face if the actual radius value is equal to or higher than the predetermined radius value.

15           2. The method according to claim 1, comprising the initial steps of:

          applying heating and a pulling force simultaneously to a part of the optical fiber;  
          breaking the optical fiber into two parts by means of the heating and pulling force;

20           and

          continuing heating of the end face of one of the fiber parts.

25           3. The method according to claim 1, wherein the step of calculating the actual radius value of the end face comprises the steps of:

          visually locating a number of points on the surface of the end face of the optical fiber;  
          creating an imaginary circle with a circumference passing through the points using a best fit calculation method;  
          calculating the radius value of the imaginary circle; and  
          using the calculated radius value as the actual radius value.

25           4. The method according to claim 2, wherein the step of calculating the actual radius value of the end face comprises the steps of:

searching for two diametrically opposed edge points on the fiber end part that is continuously heated;

calculating a center point between the two edge points; and

searching for the position of the fiber end tip using the calculated position of the center point and camera registering.

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5. An arrangement for shaping an end face of an optical fiber, comprising:

means for heating the end face to form a substantially hemispherical end face having a predetermined radius value;

means for repetitively calculating an actual radius value of the end face;

means for comparing the actual radius value with the predetermined radius value;

means for continuing heating of the end face if the actual radius value is lower than the predetermined radius value; and

means for discontinuing the heating of the end face if the actual radius value is equal to or higher than the predetermined radius value.

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6. The arrangement according to claim 5, wherein:

a first and a second gripping device are arranged to grab and fix the optical fiber;

a heat source is arranged to produce heat energy between the first and second gripping device;

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one gripping device is arranged to be moved from the other gripping device and apply a pulling force to the optical fiber for breaking the optical fiber into two parts with end faces; and

the heat source comprises the means for heating one of the end faces.

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7. The arrangement according to claim 5, wherein the means for calculating the actual radius value of the end face comprises:

means for visually locating a number of points on the surface of the end face of the optical fiber;

means for creating an imaginary circle with a circumference passing through the points using a best fit calculation method;

means for calculating the radius value of the imaginary circle; and

5 means for setting the actual radius value equal to the calculated radius value.

8. The arrangement according to claim 7, wherein the heat source comprises a plasma generator or a laser and wherein the means for visually locating a number of points on the surface of the end face comprises a Charged Coupled Device camera (CCD-camera) 10 or a C-MOS camera.

9. A computer program for use in an end face shaping arrangement for optical fibers which, in order to form a substantially hemispherical end face having a predetermined radius value, comprises:

15 computer readable code means, which when run on a computer, causes the end face shaping arrangement to heat the end face;

computer readable code means, which when run on a computer, causes the end face shaping arrangement to repetitively calculate an actual radius value of the end face;

20 computer readable code means, which when run on a computer, causes the end face shaping arrangement to compare the actual radius value with the predetermined radius value;

computer readable code means, which when run on a computer, causes the end face shaping arrangement to continue heating of the end face if the actual radius value is lower than the predetermined radius value; and

computer readable code means, which when run on a computer, causes the end face shaping arrangement to discontinue the heating of the end face if the actual radius value is equal to or higher than the predetermined radius value.

10. A computer program product comprising:

5 a computer readable medium; and

a computer program according to claim 9;

said computer program being recorded on said computer readable medium.

11. The computer program product according to claim 10, wherein said computer

10 readable medium comprises a memory chip or a diskette.